

SUPPLEMENT

THE INSTITUTION OF PRODUCTION ENGINEERS, 10 CHESTERFIELD STREET, MAYFAIR, LONDON, W.1

THE ANNUAL DINNER - 1961

The Institution's Annual Dinner, 1961, will be held in the **DETROIT PUBLIC LIBRARY**

Dorchester Hotel, London T 4 1961

on

TECHNOLOGY
DEPARTMENT Jt a

Wednesday, 1st November, 1961

Guest of Honour: THE RT. HON. VISCOUNT CHANDOS, P.C., D.S.O., M.C.,
Chairman, Associated Electrical Industries Ltd.; President, Institute of Directors.

Tickets, price £3 5s. 0d. each (excluding wines), may be ordered on the form overleaf. Owing to limited accommodation, it is not possible to have lady guests. Tickets and table places for members and gentlemen guests will be allocated in strict order of receipt of applications. Seating will be at round tables of 10 persons.

PLEASE NOTE — Because of printing time it may not be possible to include in the printed seating list the names of applicants for tickets received after 19th OCTOBER, 1961.

THE 1961 SIR ALFRED HERBERT PAPER

Members are advised that The 1961 Sir Alfred Herbert Paper will be presented at **The Royal Aeronautical Society, London**, on **Tuesday, 17th October, 1961**, at **6.30 p.m.** Tea will be available before the lecture.

The speaker will be **Mr. David Donne, M.A.**, Executive Director, The Charterhouse Industrial Development Company, and the subject:

"FINANCE FOR INDUSTRIAL GROWTH"

Mr. Donne will describe the problems of finding and providing finance for growing industrial companies, and in particular the features that a City Institution looks at when considering the provision of additional finance.

The meeting will be open to both members and non-members of the Institution, but admission will be by ticket only, obtainable on application to: The Secretary, at 10 Chesterfield Street, Mayfair, London, W.1.

MATERIALS HANDLING CONVENTION, 1961

"Profit by Handling!"

at the Connaught Rooms, London, on 3rd and 4th November, 1961

The subject matter of the Convention, which will be opened by the President of the Institution, **Mr. Harold Burke**, will be divided into two channels running concurrently throughout the Convention, under the following headings:

- (a) **Materials Handling to and from the point of production.**
- (b) **Materials Handling at the point of production.**

The following Papers will be given :

- "Materials Handling in the Transport of Perishables" by R. Harvey, Director-Transport, Express Dairy Co. Ltd.
- "Materials Handling in the Post Office Supplies Department" by H. H. Simmons, Assistant Supplies Controller, G.P.O.
- "Rail Transport and Materials Handling" by A. W. Davis, Assistant Freight Officer (Cartage and Terminals) British Transport Commission.
- "Manufacture and Handling of Open-Top Containers" by C. H. Manners, Head of Materials Handling Division, The Metal Box Co. Ltd.
- "Cargo Handling by Mechanical Means" by G. W. Smith, Traffic Superintendent, Port of London Authority.
- "Mass Production Handling" by M. Hulett, Head of Materials Handling and Forward Planning for Body Group, Ford Motor Co. Ltd.
- "A New Covent Garden Market" by C. W. Glover, Senior Partner, C. W. Glover & Partners.
- "Handling in the Manufacture of Flat Glass" by P. M. Denlow, Chief Methods Study Engineer, Pilkington Bros. Ltd.

Each Paper will be followed by discussion.

There will be an informal Convention Dinner on Friday evening, 3rd November, to which ladies may be invited.

Conference fees (inclusive of Convention and Dinner) :

- Members of The Institution of Production Engineers and The Institute of Materials Handling — **4½ guineas.**
- Others — **5 guineas.**
- Additional dinner tickets — **30s. each.**

To : **The Conference Secretary,
Institution of Production Engineers,
10 Chesterfield Street,
Mayfair, London, W.1.**

Please send me full programme details and registration form in connection with the Materials Handling Convention to be held on 3rd and 4th November, 1961.

NAME.....

ADDRESS.....

The International Journal of Production Research

a new forum for production research

The advancement of production engineering is dependent on continued research and in November next, The Institution of Production Engineers will publish the first issue of a new quarterly Journal:

The International Journal of Production Research

The aim of the editorial board of the new Journal is to provide an international forum for production research work, for the advancement of scientific study of all factors which influence the production process. All aspects of production research will be covered — engineering, economics, mathematics, physiology, psychology.

The Journal will be of fundamental interest to all concerned with research into production processes, industrial skills, planning, co-ordination and production policy. The contents of the first issue are listed overleaf.

the editorial board

The new Journal will be edited by Professor N. A. Dudley, Head of the Department of Engineering Production in the University of Birmingham. He will be assisted by two Associate Editors: Dr. E. N. Corlett, Senior Research Fellow in the Department of Engineering Production, University of Birmingham; and Dr. S. Eilon, Reader in Production Engineering at Imperial College, University of London; and by the following panel of Consulting Editors:

Professor R. M. Barnes, University of California.

Professor W. Daenzer, Eidgenössische Technische Hochschule, Zurich.

Professor P. L. Henderson, University of Melbourne.

Professor Knut Holt, Norwegian Institute of Technology.

Professor R. Kristensson, Kungliga Tekniska Högskolan, Stockholm.

Professor J. Loxham, College of Aeronautics, Cranfield.

Dr. T. U. Matthew, Massey-Ferguson (United Kingdom) Ltd.

Professor Milton C. Shaw, Carnegie Institute of Technology, Pittsburgh.

Professor R. Mishra, Indian Institute of Technology, Kharagpur.

Professor J. de Orbanya y Aragon, University of Barcelona.

Dr. E. Schmidt, Nestle Alimentana Co. Ste An., Switzerland.

Professor S. A. Tobias, University of Birmingham.

(continued overleaf)

The Editorial Committee of the Institution is responsible for the administration of the new Journal, and correspondence relating to subscriptions and other administrative matters should be addressed to :

The Managing Editor,
Miss M. S. C. Bremner,
International Journal of Production Research,
10 Chesterfield Street, Mayfair, London, W.1.

Subscriptions (including postage)

Members of The Institution of Production Engineers £4 4s. 0d. p.a.
(single copies : 25s. each)

Non-members £5 5s. 0d. p.a.
(single copies : 30s. each)

For bulk orders of three subscriptions and over, there will a reduction of 10s. per subscription.
All remittances should be made payable to "The Institution of Production Engineers".

THE INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH

Vol. 1., No. 1, November, 1961

CONTENTS

Two Inventory Control Models. S. Eilon, Imperial College, London.

A Note on an Application of Linear Programming. G. Gregory, University of Melbourne.

An Electrical Analogue for Solving Transportation Problems. P. R. Hills, College of Food Technology, Weybridge.

Selective Assembly — Its Analysis and Applications. E. M. Mansoor, University of Melbourne.

Research in Machining High Strength Materials at Elevated Temperatures. W. Pentland, J. L. Wennberg and C. L. Mehl, Cornell University and Cincinnati Milling Machine Co.

A Study of the Variety of Paper Sizes in the United Kingdom (abstracted) M. H. Perwani and S. Eilon, Imperial College, London.

The Division of Labour and Mental Health. L. Walther, Institute of Applied Psychology, University of Geneva.

Optimal Revision Periods. D. J. White, University of Birmingham.

To : **The Managing Editor,**
International Journal of Production Research,
10 Chesterfield Street,
Mayfair, London, W.1.

Please enter on my behalf.....subscriptions to The International Journal of Production Research.

I enclose remittance for....., made payable to The Institution of Production Engineers.

NAME.....

ADDRESS.....

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"QUANTITATIVE ANALYSIS FOR MANAGEMENT"

A study and orientation course in quantitative analysis for management will be held on **Wednesday - Thursday, 15th - 16th November, 1961**, at **10 Chesterfield Street, Mayfair, London, W.1**, by the Institution's Assistant Education and Technical Officer, Mr. W. S. Horwood.

The course will involve a discussion of the philosophy of model building and optimisation, and a brief discussion of schematic methods. The major part of the course will take the form of an explanation, with examples, of such techniques as linear programming, market research, total value analysis, and a proposition for design for production.

TIMETABLE

Wednesday, 15th November

- 9.30 a.m. Opening by Chairman.
- 10.00 a.m. Introduction and discussion of schematic models.
- 11.00 a.m. Coffee.
- 11.30 a.m. Linear Programming—graphical solution, 3-dimensional problem setting up and inversion of matrix.
- 1.00 p.m. Luncheon.
- 2.00 p.m. Transportation model.
- 3.30 p.m. Tea.
- 4.00 p.m. Discussion and Tutorial.
- 4.45 p.m. Finish.

Thursday, 16th November

- 9.30 p.m. Total Value Analysis, Economic Lots, and an outline of break-even charts and incremental costing.
- 11.00 a.m. Coffee.
- 11.30 a.m. Discussion and Tutorial.
- 12.00 p.m. Luncheon.
- 1.30 p.m. Market Research and "salesmanship".
- 2.30 p.m. Tea
- 3.00 p.m. Production Design and the problem of tolerancing—the cost of "quality" and a discussion of "design life".
- 4.00 p.m. Open discussion.
- 4.30 p.m. Closure by Chairman.

Printed notes, luncheon and other refreshments are included in the course fees, which are as follows :

Members of the Institution	£5 5s. 0d. each.
Non-Members	£6 6s. 0d. each.

Early application for places is advisable, as the numbers will be limited to allow maximum participation of those attending.

To: **Assistant Education & Technical Officer,**
Institution of Production Engineers,
10 Chesterfield Street,
Mayfair, London, W.1.

"QUANTITATIVE ANALYSIS FOR MANAGEMENT"

Please reserve.....place(s) for the above course on behalf of the undersigned. Remittance for £....., made payable to The Institution of Production Engineers, is enclosed.

NAME.....

ADDRESS.....

SOUTH-EASTERN REGION GRADUATE PRIZE COMPETITION

It is announced by the S.E. Region Committee that the successful entry in the 1960 - 1961 Graduate Prize Competition was submitted by **Mr. B. Johnson**, who received the £25 award for his Paper on "Gun Drills and Allied Tools".

At the time of submitting the Paper, Mr. Johnson was a Tooling Engineer with Borg-Warner Ltd., Letchworth, and a member of the Luton Graduate Section. Early this year he moved to Manchester, to take up the position of Chief Planning Engineer at the Automatic Transmission Division of Gresham & Graven Ltd.

THE 1961/62 COMPETITION

The S. E. Region Committee are again running a Competition on similar lines this year. All Graduates and Students of the S.E. Region of the Institution may enter for the Competition, and the Prize will again be £25, with a Certificate as a permanent memento. In addition, the winner and the candidates whose entries reach a certain standard will be invited (with partner) to the Regional Dinner-Dance at the Savoy Hotel, London, on 30th November, 1962, where the presentation will be made.

Papers may be submitted on any subject within the field of Production Engineering. It is hoped that candidates will describe their own experiences in any aspect of Production Engineering rather than attempt to present a theoretical "textbook" Paper. Papers should not be less than 2,000 nor more than 6,000 words in length, and although they should preferably be typewritten, Papers in the candidate's own handwriting will be accepted.

Completed Papers must be submitted by **30th December, 1961.**

Full details of the Competition and application forms may be obtained from :

**The Institution of Production Engineers,
10 Chesterfield Street,
Mayfair, London, W.1.**

Envelopes should be marked "S.E. Region Graduate Prize".

LONDON GRADUATE SECTION WEEKEND SCHOOL

28th - 29th October, 1961

at Beatrice Webb House, near Dorking, Surrey.

Theme : "USING PLASTICS"

Full details may be obtained from : **Mr. P. C. Kilby, Grad.I.Prod.E., 6 Birchwood Drive, Wilmington, Kent.**

SOUTH-EASTERN REGION DINNER-DANCE

The Annual Dinner-Dance of the South-Eastern Region of the Institution will be held at the **Savoy Hotel, London, on Friday, 24th November, 1961, at 7.15 p.m. for 8 p.m., until 1 a.m.**

Tickets, price £2 12s. 6d. each, may be obtained from: **Miss M. Miles, Room 342, Marconi's Wireless Telegraph Co. Ltd., Chelmsford, Essex.** Remittances should be made payable to "South-Eastern Region of the I.Prod.E."

The number of tickets is limited to 350 and all applications will be dealt with in order of receipt.

COVENTRY SECTION DINNER-DANCE

The Annual Dinner-Dance of the Coventry Section will be held on **Wednesday, 4th October, 1961, at The Hotel Leofric, Broadgate, Coventry.** The reception will be at 7.30 p.m. for Dinner at 8 p.m., and there will be dancing until 1 a.m.

Tickets, price 37/6 each, may be obtained from: **Mr. W. G. Key, 117 Baginton Road, Coventry.**

ADVANCE NOTICE

CARDIFF SECTION CONFERENCE

9 a.m. - 4.30 p.m., 3rd November, 1961

at The South Wales Institute of Engineers, Cardiff

"ZINC-BASE ALLOY DIE-CASTING"

in conjunction with The Zinc Alloy Die-Casters' Association.

INSTITUTION NECK-TIE

The Council has agreed to make available, for members of the Institution, an Institution neck-tie. The initial stock will be ready in October, 1961.

The tie is attractively designed in Terylene, with a black background bearing as a motif the shield, in red, white and gold, from the Institution's armorial bearings. It will be sold to members only at 15s. 6d., including packing and postage.

Orders for the tie should be sent to the Institution at 10 Chesterfield Street, Mayfair, London, W.1, together with the necessary remittance made payable to The Institution of Production Engineers. Ties will be supplied only on a CASH WITH ORDER basis.

SECTION MEETINGS

Visitors' Tickets may be obtained from Section Honorary Secretaries

SEPTEMBER, 1961

EAST AND WEST RIDINGS

Sheffield Graduate 6.30 p.m. September 18th
Works Visit to The Parkgate Iron and Steel Co. Ltd., Rotherham.
"The Processing and Handling of Steel" by a representative of the Company.
Rendezvous at the Main Gates.

EASTERN REGION

Norwich 7.00 p.m. September 13th
Works Visit to British Steel Piling Ltd., Claydon.
Joint visit with the Ipswich and Colchester Section.

MIDLANDS REGION

Birmingham 6.30 p.m. for 7.00 p.m. September 13th
Byng Kendrick Suite, College of Technology, Gosta Green, Birmingham.
Film evening. Films include: "Heroic Days", "Time to Think", "Industrial Electric Heating".
Coffee and biscuits served from 6.30 p.m. on a cash basis.
Joint meeting with the Graduate Section.

NORTHERN REGION

Newcastle upon Tyne Graduate 10.15 a.m. September 23rd
Visit to Spadeadam Rocket Establishment, Gilsland, Cumberland.
Leave Rutherford College of Technology at 9.30 a.m.

NORTH MIDLANDS REGION

Nottingham 7.00 p.m. September 13th
Works Visit to Raleigh Industries Ltd., Nottingham.
Rendezvous at Works.

SOUTH WESTERN REGION

Western Graduate 7.30 p.m. September 6th
The Small Lecture Theatre, Faculty of Engineering, Queen's Building, University of Bristol, University Walk, Bristol, 8.
"Britain and the Common Market" by Russell Lewis.
(Information Service of the European Communities.)
Coffee and biscuits will be served after the meeting.
Visitors welcome.

WALES REGION

Swansea 7.00 p.m. September 11th
The Dragon Hotel, Kingsway, Swansea.
"The Industrial History of South Wales, and Its Change in Economic Pattern" by Mr. Carmen, of the Economic League, Cardiff.

OCTOBER, 1961

EAST AND WEST RIDINGS REGION

Sheffield 7.00 p.m. October 9th
Annual Dinner, at Grand Hotel, Sheffield.
Dinner Dress.

NORTH MIDLANDS REGION

Nottingham 7.00 p.m. October 4th
Nottingham Reform Club, Victoria Street, Nottingham.
"The Application of Spark Machining to Die Making in Different Industries" by J. P. Blackshield.

SCOTLAND REGION

Glasgow 7.30 p.m. October 3rd
Works Visit to India Tyre Co. Ltd.

SOUTH WESTERN REGION

Western 7.00 p.m. October 4th
The Large Engineering Lecture Theatre, University of Bristol, Queen's Walk, Bristol.
"Rocket Propulsion of Aerodynamics and Space Vehicles" by E. G. D. Andrews, M.I.Mech.E.
Joint meeting with the Royal Aeronautical Society.

Production Appointments

BULLETIN No. 96

SEPTEMBER, 1961

The last date for receiving material for insertion in the following month's bulletin is the 20th of each month, and cancellations cannot be accepted after this date. Correspondence should be addressed to: The Publications Department, The Institution of Production Engineers, 10 Chesterfield Street, Mayfair, London, W.1 (Telephone: GROsvenor 5254).

RATES — Run-on, per appointment: £4 4s. 0d. up to 100 words; £1 1s. 0d. for each additional 100 words or part thereof.

Special rate for firms affiliated to the Institution, technical colleges and universities: £2 2s. 0d. per appointment up to 100 words, and 10s. 6d. for each additional 100 words or part thereof.

Displayed: £6 per single-column inch (column width $3\frac{1}{4}$ in.). Special rate for firms affiliated to the Institution, technical colleges and universities: £5 10s. 0d. per single-column inch. Agency discount on displayed advertisements 10%.

Advertisers are advised that better response is likely if, in addition to essential qualifications, the following information is given:

(a) Location of appointment; (b) Status in the organisation and scope of promotion; (c) Salary range and age range. Advertisers are asked to advise the Institution when appointments are filled. The Institution reserves the right to refuse or withdraw any announcement and also to make any alteration in the wording to ensure conformity with the Institution standards. *Members interested in the following appointments should make application in accordance with the terms of notice. No correspondence can be undertaken by the Secretary other than the forwarding of replies to Box Nos.*



New Appointments

WITH

KOLSTER-BRANDES LIMITED

St. Leonards-on-Sea

Due to prospects of a steady increase in production at our modern new factory only a mile from Hastings and the sea, we have vacancies for:

FORWARD PLANNING ENGINEER

to establish layouts for Radio, Television and other electronic production lines, and for all factory services, working in conjunction with the Plant Engineer. Applicants, aged 25 to 30, should have had two years experience on similar work and must be qualified to H.N.C. level in Mechanical or Production Engineering.

PROJECTS ENGINEER

to investigate technical faults, methods for reject control and other problems associated with the production of Radio and Television receivers. Applicants, aged 25 to 30, besides being qualified to H.N.C. level in Electrical or Mechanical Engineering, should be well versed in the methods of technical investigation.

Both posts offer plenty of scope to those who can contribute positive ideas for promoting efficiency of production. The Company offers free sickness and pension schemes as well as a canteen, social club and other fringe benefits.

Please write in confidence to the **PERSONNEL OFFICER,**
KOLSTER-BRANDES LIMITED,
PONSWOOD INDUSTRIAL ESTATE,
THEAKLEN DRIVE, ST. LEONARDS-ON-SEA.

MSL have been retained to advise on this appointment.

WORKS MANAGER

for a company employing 400 in mass-production of precision engineering products for the consumer market. The factory is within 20 miles of the coast and golf, sailing and the beaches are readily accessible. He will be responsible to the General Manager for all production and engineering functions and personnel.

Candidates must be professional mechanical engineers with practical experience of light or precision engineering. Management experience and a knowledge of modern management techniques as applied to mass-production are important. Knowledge of steel technology would be useful. Age 35-45 years. Salary at least £2,000 plus company car, pension and life assurance provisions. Three weeks' holiday. Removal expenses paid. Please send brief details in confidence quoting reference GAF 9123 to D. C. Duncan.

In no circumstances will a candidate's identity be disclosed to our client unless he gives permission after a confidential interview at which he will be given full details of the appointment.

MANAGEMENT SELECTION LIMITED

17 Stratton Street, London, W.1

Officer. Warren Spring Laboratory (D.S.I.R.) Human Sciences Section requires officer to carry out research in relation to the design of hand-and-foot controls of machines and equipment, and associated enquiry and advisory duties. Suitable candidates will include those with a first- or second-class Honours Degree in natural science, engineering or physiology, with subsequent experience in ergonomics, for whom the grading of Scientific Officer or Senior Scientific Officer will be appropriate. (Interim) Salary ranges. Scientific Officer £717-£1,186; Senior Scientific Officer £1,302-£1,604. Application forms and further information from the Director, Warren Spring Laboratory, Gunnels Wood Lane, Stevenage, Herts, quoting 16S/5. Closing date 15th September, 1961.

MORPHY - RICHARDS

Plans for the extension of production in overseas territories have created the following vacancies:

PRODUCTION METHODS ENGINEER, aged 20-40 with a thorough practical knowledge of flow production engineering methods. A background of experience in tool making and tool design is desirable, preferably including sheet metal work or electric motor assembly. H.N.C. standard. This appointment will be based initially at St. Mary Cray, but applicants should be prepared to travel, or live abroad on a semi-permanent basis if required.

ENGINEERING GRADUATES. Continuing expansion of production and of the range of domestic appliances manufactured has also created further vacancies for Engineers with post-graduate experience in industry. These appointments are for interesting and progressive careers in Production Engineering, or in Design and Development Departments for men with a light engineering background in these fields. A training course is offered of from one to two years' duration for Engineers whose previous experience in this industry is limited or for Graduates direct from University.

Please telephone for further details or write to: **Personnel Officer, Morphy-Richards (Cray) Ltd., St. Mary Cray, Kent. (Orpington 27000)**



PRODUCTION ENGINEERS

required for

MOORWOOD-VULCAN LTD.

Two Production Engineers required for factory now being rebuilt for integrated production of Commercial Catering Equipment by line, batch and one-off methods. They will be directly responsible to the Works Manager for:

- 1 superintending assembly line for gas and electrical appliances to start production mid 1962; initially responsible for tooling up for press work, welding and assembly.
- 2 superintending assembly of gas, electrical and steam heated appliances; experience of fabricating from mild and stainless steel essential.

This is a new project with excellent opportunities for advancement. Age group both appointments 30-40 years.

The Company operates a Pension Scheme and would be willing to assist with re-housing.

Written applications giving details of qualifications, experience and salary required to be sent in confidence to: **THE WORKS DIRECTOR, MOORWOOD - VULCAN LTD., HARLESTON STREET, SHEFFIELD, 4.**

Moorwood-Vulcan Ltd. is one of the Brightside Group of Companies.

Production Manager required by small, prosperous light engineering and coil winding company manufacturing its own patented coil winding and wire making machines, and sub-contract coil winding to the electrical industry. Position would suit man of initiative with organising and managerial ability. Minimum qualification O.N.C./H.N.C. and full apprenticeship in tool-making or instrument-making. Some coil winding experience preferred but this is not essential. Optimum age 30-40 years. Very interesting work and a real opportunity for expansion and advancement. Salary and bonus in first year: £1,000-£1,300. Please write to: Shawndel Flyers Ltd., 72 Queen Street, Maidenhead, Berks.

ASSISTANT WORKS MANAGER

required by long established Engineering Public Company, situated in the West Riding of Yorkshire. Must have sound technical background with metallurgical knowledge and mechanised foundry experience in large scale production of pressure-tight gun metal castings. Age 28-35. Pension and Life Assurance Schemes. Apply in confidence, stating qualifications and present salary to:

BOX NO. 2059,

I.P.R.O.D.E.,

10 CHESTERFIELD STREET,

MAYFAIR, LONDON, W.1.

Existing personnel have been advised of this appointment.

ENGINEERS



A leading company concerned in line and batch manufacture of Thermoplastic and Rubber Products in the North-East of England, and in Injection and Compression mouldings, Metal Blanking and Forming and allied processes in London, offers outstanding opportunities for experienced engineers with professional qualifications.

PLANT ENGINEER

To be responsible for the entire Works Engineering of a wide variety of plant covering the several manufacturing operations in a modern factory in the North-East.

INDUSTRIAL ENGINEERS

Two Engineers to undertake responsibility for the Administration and Development of an Industrial Engineering Service in the London and in the North-East factories. Specialised experience in the Work Study field is essential, preferably in a supervisory capacity.

It is the intention that the men appointed will be of the calibre to accept in later years senior responsibilities within the Company. Realistic starting salaries will be offered to men with the right qualities.

Applications may be forwarded in strict confidence to the **PERSONNEL MANAGER, KINGSBURY, LONDON, N.W.9.**



Morganite Carbon Ltd

A Member of the Morgan Crucible Group

offer the following vacancies :

PLANNING AND ESTIMATING ENGINEER

(Ref. AI/77A)

An experienced engineer, aged 30 - 45, H.N.C. or better, with practical and drawing office experience, qualified to undertake planning and estimating for factory services and plant and machine layout.

PRODUCTION ENGINEER

(Ref. AI/77B)

A graduate engineer (A.M.I.Mech.E. or A.M.I.Prod.E.), aged 25 - 35, for work with an existing team of production and development engineers engaged in improving methods of operation in departments concerned with the preparation of raw materials, mixing, pressing and heat-treatment.

METHODS ENGINEER

(Ref. AI/77C)

Aged 25 - 35, with H.N.C. in mechanical or production engineering and experience in methods and work study, to investigate and improve light engineering production methods on the shop floor.

Please apply, giving relevant details, and quoting above reference numbers, to :

**THE STAFF MANAGER,
MORGANITE CARBON LIMITED,
BATTERSEA CHURCH ROAD,
LONDON, S.W.11.**

HOPKINSONS LTD., HUDDERSFIELD

require a

Chief Planning Engineer

The suitable applicant will be responsible to the Works Director for the detailed planning of layouts, and control of a new Work Study Department, to be organised in conjunction with the Production Manager.

Candidates should be aged 35 - 45 and have had experience in medium to large batch production. Experience of Trade Union procedure and negotiations would be helpful. Applicants should possess H.N.C. or equivalent, but this is not essential. Starting salary not less than £1,500. There is a contributory Pension Scheme and assistance would be given with housing, if required. Apply giving full personal details and experience to :

**I. G. HOPKINSON,
WORKS DIRECTOR,
HOPKINSONS LTD.,
HUDDERSFIELD.**

DESIGNER - DRAUGHTSMAN

for product development involving small and complex mechanisms. Interest in and ability to work on prototypes an advantage. First class opportunity for man to join a newly formed team. Full facilities. South Birmingham area. Please apply to :

**BOX No. 2062, I.PROD.E., 10 CHESTERFIELD STREET,
MAYFAIR, LONDON, W.1.**

JIG AND TOOL DESIGNERS

Applications are invited from experienced men preferably with H.N.C. or similar qualification to work on a wide variety of jig and tool designs. With specialist knowledge in any of the following: press tools, gauging or tooling for small precision components. Good conditions, full facilities. Factory situated in the country south of Birmingham. Apply to :

**BOX No. 2063, I.PROD.E., 10 CHESTERFIELD STREET,
MAYFAIR, LONDON, W.1.**

HARVEY

MANAGEMENT TRAINEES

G. A. Harvey & Co. (London) Ltd., due to company expansion, have vacancies for young men to be trained to fill managerial positions. Those applying must have an engineering background, preferably founded on an apprenticeship and supported by Graduate or Associate Membership of either The Institution of Mechanical Engineers or The Institution of Production Engineers.

Preferred age group is 27-34 but consideration will be given to younger men who have exceptional experience, or to older ones with experience of sheet metalwork or plate fabrication. A training programme will be arranged to fit successful applicants for responsible managerial positions within the company. Salaries will be commensurate with age and experience, but are such as will prove attractive to the right men.

Applications, giving full details of age, experience, education and salary will be treated in strict confidence and should be addressed to:

**THE PERSONNEL MANAGER,
G. A. HARVEY & CO. (LONDON) LTD.,
GREENWICH METAL WORKS,
LONDON, S.E.7.**

Senior Quality Control Engineer. Kenwood Manufacturing (Woking) Ltd. requires a Senior Quality Control Engineer. The suitable applicant must have production and design experience preferably in the field of domestic appliances or electro-mechanical mechanisms. This is a superannuated post for a keen energetic person aged between 30-37 years eager to join an expanding progressive Company. Applications in writing stating age, qualifications, past experience and salary required to: Personnel Manager, Kenwood Works, Old Woking, Surrey.

Departmental Manager. Manufacturers of industrial electric motors with world-wide connections require the services of a Manager for a Division employing upwards of 250 male and female employees in high volume production. Applications are invited from men having the necessary production experience interested in modern methods and an expanding programme. Please state, in confidence, experience to date and salary expected to: Box No. 2060, I.Prod.E., 10 Chesterfield Street, Mayfair, London, W.1.

WORKS MANAGER CRANE BUILDING

A leading manufacturer of Overhead Cranes and ancillary equipment invites applications for the position of Works Manager.

The successful applicant will be responsible for the administration of the machine, assembly and constructional shops, and should be able to show a good record of successful previous performance in these fields, and capable works organisation and administration.

This is a challenging opportunity with continuing prospects. The salary is open and the position will command all the usual benefits.

Applications, all of which will be acknowledged, will be held in the strictest confidence and should be sent to: BOX No. 2058, I.PROD.E., 10 CHESTERFIELD STREET, MAYFAIR, LONDON, W.1.

PRODUCTION CONTROLLER

Production Controller required to take charge of department and be responsible for both jobbing and small to medium batch production control. The position requires a trained engineer with a flair for organising production programmes from material ordering, through machining, assembly and packing, to despatch.

Good prospects and a salary of not less than £1,350 are offered for the right man.

Applications giving full personal details should be sent to: **The Director and Works Manager, Stone-Chance, Ltd., Lighthouse Works, Gatwick Road, Crawley, Sussex.**

Officer. Warren Spring Laboratory (D.S.I.R.) Human Sciences Section requires Officer to carry out research in relation to the design of hand-and-foot controls of machines and equipment, and associated enquiry and advisory duties. Suitable candidates will include those having relevant experience and professionally qualified with first- or second-class Honours Degree including psychology as a main subject; a Bachelor of Education degree of a Scottish University or of the University of Belfast; a post-graduate diploma in psychology, following at least two years' systematic study; or Fellowship of the British Psychological Society or equivalent qualification, for whom the grading of Psychologist will be appropriate. Establishment prospects for candidates under 31 years. Salary range (under review) £575 - £1,220. Application forms and further information from the Director, Warren Spring Laboratory, Gunned Wood Lane, Stevenage, Herts., quoting 16S/P. Closing date, 15th September, 1961.

Electronics Engineer. PERA requires an Electronics Engineer for the design and development of special circuits and prototype instruments. Experience in transistor circuit design would be an advantage. The position will involve working in collaboration with member firms and developing basic ideas for instruments to the production stage. The conditions of employment are attractive and there are excellent prospects for advancement. Superannuation scheme. Removal expenses paid. Full details in confidence to: The Secretary (R.915), Production Engineering Research Association, Melton Mowbray, Leics.

ASSISTANT TO WORKS DIRECTOR

Applications are invited for the above post within our Company which may well lead to the position of Works Manager within a comparatively short period of time. Applicants should be keen, conscientious and energetic types with the following qualifications and experience:

1. Recognised engineering apprenticeship.
2. Experience in precision engineering.
3. Experience in heat treatment of small tools.
4. Experience in drawing office and design work.
5. Some years supervisory experience.
6. Proved ability to plan and organise to meet increasing production requirements.
7. Membership of an appropriate professional institution or equivalent technical qualifications.

Salary according to qualifications and experience. Pension and Life Assurance Schemes. Good conditions. Pleasant district.

Please send full details of age, qualifications and experience, in strictest confidence, to: **THE WORKS AND TECHNICAL DIRECTOR, FRANK GUYLEE & SON LTD., MILL-HOUSES, SHEFFIELD, 8.**

Plessey

Planning Engineers at Havant, Hants.

Applications are invited from time-served engineers for appointments as **Senior Planning Engineers**.

The successful applicants will be given the responsibility for one of the Company's Units, and will be responsible for taking projects from the design stage to the manufacturing and final assembly stages. They will be required to have a thorough knowledge of tool design, press work and automatics and general machine shop practice, and be capable of discussing production problems on the shop floor. Qualifications to H.N.C. an advantage.

The appointments carry immediate entry into the Company's Pension and Life Assurance Scheme, and assistance with rented housing is available in certain cases.

● Apply:

● **Regional Personnel Manager,
The Plessey Company Limited,
New Lane,
Havant, Hants.**
● quoting reference PNL/74.

Young Engineer — Development Work in Footwear Production Engineering. The British Boot, Shoe & Allied Trades Research Association requires a young engineer for development work on footwear production methods and machinery. The industry has a highly developed technology which is advancing rapidly with the advent of new materials and techniques. The work will have wide scope including new manufacturing processes, the utilisation of plastics, work transport systems and improvements in traditional processes and machinery. **Qualifications:** Degree or professional qualification in engineering. An original mind is essential. **Training given:** Training in shoe technology will be arranged, also specialised training in particular engineering subjects as may be required by the projects that are to be undertaken. The starting salary will depend on age, qualifications and experience and will be such as to attract applicants of ability. **Full details including prospects, sent on request.** Write in confidence, giving brief personal particulars, to: Director of Research, Satra House, Rockingham Road, Kettering, Northants.

SENIOR PLANNING ENGINEERS

are required by a West Midland Machine Tool Manufacturer of international repute.

Experience in planning, jig and tool design, estimating, etc., for production of Machine Tools, or similar class of engineering is essential.

Applicants should possess a sound practical background with preferably H.N.C. or equivalent. An engineering apprenticeship is desirable.

Apply, stating salary required to:

**Works' Director,
Box No. 2061,
I.Prod.E.,**

**10 Chesterfield Street, Mayfair,
London, W.1.**

Design Engineer is required by expanding Company in Buckinghamshire. The Company has strong Marine and Aircraft connections and the applicant must have first class knowledge of Marine diesels and aero engines. He must have a strong Production bias with adequate practical experience in light engineering and will be fully responsible to the Board for a development programme and ensuring that all final designs are suitable for production. The appointment offers a good salary and prospects for an engineer aged 40-45, holding A.M.I.Prod.E., or equivalent. Apply to: Box No. 2064, I.Prod.E., 10 Chesterfield Street, Mayfair, London, W.1.

Assistant CHIEF INSPECTOR

required by well-known Company in London area engaged in manufacturing gears, gearboxes and automobile components.

Applicants must have at least 5 years' experience in a supervisory capacity on inspection and be fully knowledgeable on metrology, quality control and inspection procedures generally. Previous knowledge of A.I.D. procedures essential.

This is a progressive position for a man of not more than 40 years of age who may, if suitable, progress to the position of Chief Inspector.

Apply giving past experience and salary required to: Box No. 2053, I.Prod.E., 10 Chesterfield Street, Mayfair, London, W.1.



A WORKS MANAGER

is required for a developing, modern, British-controlled, electrical engineering factory in Calcutta, producing a wide range of motors, transformers, switchgear, etc.

Applicants should be preferably between the ages of 30 and 40, and have had considerable experience in modern methods of management, using budgetary and production control systems. Familiarity with incentive systems of payment is essential.

There are good prospects of promotion for a suitable man who is prepared to make a career in India. The Company operates a pension scheme and supplies free medical attention and free unfurnished accommodation.

Apply with full personal particulars and history and salary expected to :

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COMMENCING 16th OCTOBER, 1961

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MTM COURSE—4 WEEKS
COMMENCING 6th NOVEMBER, 1961

FEE: £110 per person

The Courses are non-residential

Further details are available upon application to:

H. B. Maynard & Co. Ltd.,
199 Piccadilly, London, W.1.
telephone: REGent 5696

University of Melbourne.

Senior Lecturer in Industrial Engineering. Applications are invited for the above-mentioned position. Applicants should have an engineering degree and knowledge and experience of Industrial or Production Engineering, or a Science or Arts degree with qualifications in statistical methods and operations research. The salary range is £A2,480-£A2,950 p.a. Commencing salary will be fixed according to qualifications and experience. Superannuation similar to F.S.S.U. in Great Britain will be provided. Conditions of appointment can be obtained from the Secretary, Association of Universities of the British Commonwealth (Branch Office), Marlborough House, Pall Mall, London, S.W.1. The closing date for applications was 31st August, but further applications will be received up to **30th September, 1961.** Professor P. L. Henderson, Professor of Mechanical Engineering in the University of Melbourne, who is at present in Europe, can be contacted through this Association.

Work Study School, Cranfield.

Applications are invited for appointment to the Lecturing Staff of the Work Study School. Candidates should preferably be graduates with a minimum of three years' industrial or commercial experience in Work Study. Special experience in office organisation would be an additional recommendation. Opportunity exists for participating in research and working in collaboration with the Ergonomics and Operational Research groups of The College of Aeronautics. Salary in scale £1,050 × £50-£1,400 × £75 — £1,850 p.a. with superannuation under F.S.S.U. and family allowance, commencing salary depending upon age, qualifications and experience. Consideration given to housing requirements. Applications giving full particulars and quoting the names of three referees, to the Recorder, The College of Aeronautics, Cranfield, Bletchley, Bucks. Further particulars available.

COLLEGE OF ADVANCED TECHNOLOGY, BIRMINGHAM

DEPARTMENT OF PRODUCTION ENGINEERING

Applications are invited for the post of

LECTURER IN PRODUCTION ENGINEERING

SALARY SCALE: LECTURERS £1,370 - £1,550

Further particulars and forms of application from the **Bursar, College of Advanced Technology, Gosta Green, Birmingham, 4.** Applications to be received within 14 days of this advertisement. Please quote 861/N

K. R. PILLING, Clerk to the Governors.

Lanchester College of Technology, Coventry.

Applications are invited for the following posts, duties to commence as soon as possible. **Senior Lecturer in Aircraft Structures.** Candidates should normally be University graduates and membership of the Royal Aeronautical Society would be an advantage. Appropriate industrial experience is essential, while teaching and/or research experience would be of value. Salary: £1,550 × £50 — £1,750 p.a. (now under review). In certain circumstances, persons appointed may be paid commencing salary above minimum of scale **Lecturer in Production Engineering.** Candidates should be corporate members of The Institution of Mechanical Engineers or The Institution of Production Engineers, or if possible of both Institutions. Substantial industrial experience is essential, while some teaching experience would be an advantage. The successful candidate will be expected to teach one or more of the following to an advanced standard — Metrology and Inspection, Machine Tool Design and Application, Production Tooling, Production Processes. Salary: £1,370 × £35(4) × £40(1) — £1,550 p.a. (now under review). In certain circumstances, persons appointed may be paid commencing salary above minimum of scale. The College is largely housed in new buildings occupied in 1960. The Department of Production Engineering is wholly situated in new buildings while the new laboratories for the Department of Aeronautical Engineering will be available in 1963. Equipment and general facilities in the buildings are excellent and all members of staff are encouraged to pursue research. Five Dip.-Tech. courses have been approved, including courses in Aeronautical Engineering and Production Engineering and will commence in September, 1961. Further particulars and application forms from the Registrar, Lanchester College of Technology, Priory Street, Coventry, to whom all applications should be submitted by 29th September.

University of Birmingham, Institute of Engineering Production.

Applications are invited for appointment as Staff Tutor in The Institute of Engineering Production. Candidates should have a special interest in the production management function, such as statistics and experimental design, industrial economics or operational research. Salary, according to qualifications and experience, within the range £1,500-£1,900 p.m. The appointment carries F.S.S.U. and Family Allowance benefits. Applications (3 copies), naming three referees, should be sent to the Assistant Registrar (Science), The University, Edgbaston, Birmingham, 15, as soon as possible.

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